

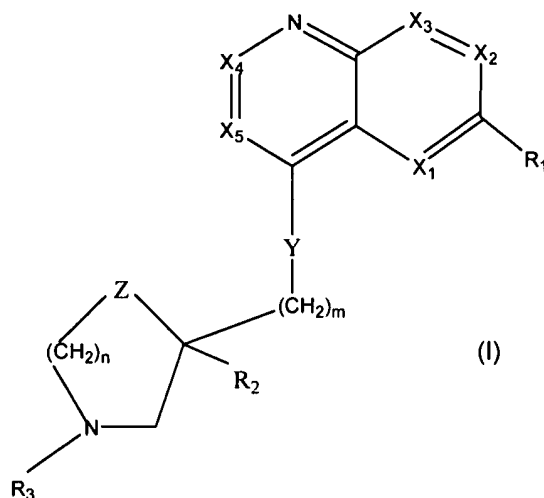
## AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

### LISTING OF CLAIMS

What is claimed is:

1. (currently amended) A 4-substituted quinoline compound, of formula (I)



wherein

X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub> and X<sub>5</sub> are C-R'<sub>1</sub> to C-R'<sub>5</sub> respectively, or alternatively at most one of them is a nitrogen atom, wherein

R<sub>1</sub>, R'<sub>1</sub>, R'<sub>2</sub>, R'<sub>3</sub>, R'<sub>4</sub> and R'<sub>5</sub> are identical or different from one another and are selected from hydrogen or halogen ~~atom~~ atoms or an alkyl, cycloalkyl, phenyl, phenylthio, mono- or bicyclic heteroaryl or heteroarylthio, OH, SH, alkyloxy, difluoromethoxy, trifluoromethoxy, alkylthio, trifluoromethylthio, cycloalkyloxy, cycloalkylthio, acyl, acyloxy, acylthio, cyano, carboxyl, alkyloxycarbonyl, cycloalkyloxycarbonyl, nitro, -NRaRb or -CONRaRb radical; [[()]]wherein Ra and Rb are selected from hydrogen, alkyl, cycloalkyl, phenyl, mono- or bicyclic heteroaryl or Ra and Rb form together with

the nitrogen atom to which they are attached a 5- or 6-membered heterocycle which may optionally contain another heteroatom chosen from O, S and N and carrying, where appropriate, an alkyl, phenyl or mono- or bicyclic heteroaryl substituent on the nitrogen atom or, alternately ~~where appropriate~~, wherein the sulfur atom is oxidized to the sulfinyl or sulfonyl state[[ ]], or alternately represent a methylene radical substituted with fluoro, hydroxyl, alkyloxy, alkylthio, cycloalkyloxy, cycloalkylthio, phenyl, mono- or bicyclic heteroaryl, carboxyl, alkyloxycarbonyl, cycloalkyloxycarbonyl, -NRaRb or -CONRaRb wherein Ra and Rb are as defined above,

or represent phenoxy, heterocyclyloxy, benzyloxy, heterocyclylmethoxy, or alternatively R<sub>1</sub> ~~may also represent~~ represents difluoromethoxy, or a radical having the structure  $\text{--C}_p\text{F}_{2p+1}\text{--C}_m\text{F}_{2m+1}$ ,  $\text{--SC}_p\text{F}_{2p+1}\text{--SC}_m\text{F}_{2m+1}$  or  $\text{--OC}_p\text{F}_{2p+1}\text{--OC}_m\text{F}_{2m+1}$  wherein p [[m]] is an integer from 1 to 6 or alternatively R'<sub>5</sub> may also represent trifluoroacetyl,

m is equal to 1, 2 or 3;

n is equal to 0, 1 or 2;

Y is CHR, CO, CROH, CRNH<sub>2</sub>, CRF or CF<sub>2</sub>, wherein R is a hydrogen atom or an alkyl (C<sub>1-6</sub>) radical;

Z is CH<sub>2</sub> or alternatively Z is oxygen ~~is oxygen~~, sulfur[[ ]], SO or SO<sub>2</sub> group and, ~~in this case wherein[[.]]~~ n is equal to 2;

R<sub>2</sub> is -CO<sub>2</sub>R, -CH<sub>2</sub>CO<sub>2</sub>R, -CH<sub>2</sub>-CH<sub>2</sub>CO<sub>2</sub>R, -CH<sub>2</sub>OH or -CH<sub>2</sub>-CH<sub>2</sub>OH, wherein R is as defined above;

R<sub>3</sub> is phenyl, mono- or bicyclic heteroaryl, alk-R°<sub>3</sub> wherein alk is an alkylene radical and R°<sub>3</sub> is hydrogen, halogen, hydroxyl, alkyloxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, dialkylamino, cycloalkyl, cycloalkyloxy, cycloalkylthio, cycloalkylsulfinyl,

cycloalkylsulfonyl, cycloalkylamino, N-cycloalkyl-N-alkylamino, -N-(cycloalkyl)<sub>2</sub>, acyl, cycloalkylcarbonyl, phenyl, phenoxy, phenylthio, phenylsulfinyl, phenylsulfonyl, phenylamino, N-alkyl-N-phenylamino, N-cycloalkyl-N-phenylamino, -N-(phenyl)<sub>2</sub>, phenylalkyloxy, phenylalkylthio, phenylalkylsulfinyl, phenylalkylsulfonyl, phenylalkylamino, N-alkyl-N-phenylaminoalkyl, N-cycloalkyl-N-phenylalkylamino, benzoyl, mono- or bicyclic heteroaryl, heteroaryloxy, heteroarylthio, heteroarylsulfinyl, heteroarylsulfonyl, heteroarylamino, N-alkyl-N-heteroarylamino, N-cycloalkyl-N-heteroarylamino, heteroarylcarbonyl, heteroarylalkyloxy, heteroarylalkylthio, heteroarylalkylsulfinyl, heteroarylalkylsulfonyl, heteroarylalkylamino, N-alkyl-N-heteroarylaminoalkyl, N-cycloalkyl-N-heteroarylaminoalkyl, wherein ~~[[()]]~~ the heteroaryl is either parts mentioned above being mono- or bicyclic~~[[()]]~~, carboxyl, alkyloxycarbonyl, -NRaRb or -CO-NRaRb wherein Ra and Rb respectively represent hydrogen, alkyl, cycloalkyl, phenyl, mono- or bicyclic heteroaryl, or one of Ra or Rb represents hydroxyl, alkyloxy, cycloalkyloxy, or Ra and Rb form together with the nitrogen atom to which they are attached a 5- or 6-membered heterocycle which may optionally contain another heteroatom chosen from O, S and N and optionally carrying, ~~where appropriate,~~ an alkyl, phenyl or mono- or bicyclic heteroaryl substituent on the nitrogen atom or alternately ~~where appropriate in which~~ the sulfur atom is oxidized to the sulfinyl or sulfonyl state~~[[()]]~~, or alternatively R<sup>o</sup><sub>3</sub> represents -CR'b=CR'c-R'a wherein R'a is phenyl, phenylalkyl, heteroaryl or heteroarylalkyl wherein the heteroaryl part is mono- or bicyclic, phenoxyalkyl, phenylthioalkyl, phenylsulfinylalkyl, phenylsulfonylalkyl, phenylaminoalkyl, N-alkyl-N-phenylaminoalkyl, heteroaryloxyalkyl, heteroarylthioalkyl, heteroarylsulfinylalkyl, heteroarylsulfonylalkyl, heteroarylaminoalkyl, N-alkyl-N-

heteroaryl aminoalkyl, heteroarylthio, heteroarylsulfinyl, heteroarylsulfonyl, wherein ~~[[()]]~~ the heteroaryl parts are ~~mentioned above being~~ mono- or bicyclic~~[[()]]~~, phenylthio, phenylsulfinyl, phenylsulfonyl, and wherein R'b and R'c represent hydrogen, alkyl or cycloalkyl, or alternatively R<sub>3</sub> represents a radical -C≡C-Rd for which Rd is alkyl, phenyl, phenylalkyl, phenoxyalkyl, phenylthioalkyl, N-alkyl-N-phenylaminoalkyl, mono- or bicyclic heteroaryl, heteroarylalkyl, heteroaryloxyalkyl, heteroarylthioalkyl, heteroaryl aminoalkyl, N-alkyl-N-heteroaryl aminoalkyl, wherein ~~[[()]]~~ the heteroaryl parts mentioned above being mono- or bicyclic~~[[()]]~~, or alternatively R<sup>o</sup><sub>3</sub> is a radical -CF<sub>2</sub>-phenyl or mono- or bicyclic -CF<sub>2</sub>-heteroaryl, wherein ~~it being understood that~~ the phenyl, benzyl, benzoyl or heteroaryl radicals or portions ~~mentioned above~~ are optionally substituted on the ring with 1 to 4 substituents chosen from halogen, hydroxyl, alkyl, alkyloxy, alkyloxyalkyl, haloalkyl, trifluoromethyl, trifluoromethoxy, trifluoromethylthio, carboxyl, alkyloxycarbonyl, cyano, alkylamino, -NRaRb for which Ra and Rb are as defined above, phenyl, hydroxyalkyl, alkylthioalkyl, alkylsulfinylalkyl, alkylsulfonylalkyl, wherein ~~it being understood that~~ the alkyl or acyl radicals and portions contain ~~(unless specifically stated)~~ 1 to 10 carbon atoms in the form of a straight or branched chain and ~~that~~ the cycloalkyl radicals contain 3 to 6 carbon atoms, wherein the compound is optionally ~~or~~ in its enantiomeric or diastereoisomeric forms, or mixtures of these forms, or ~~where appropriate~~ in a syn or an anti form or mixtures thereof, or its salts.

2. (currently amended) The compound of general formula (I), as defined in claim 1, wherein

$X_1$ ,  $X_2$ ,  $X_3$ ,  $X_4$  and  $X_5$  are as defined in claim 1, wherein

$R_1$ ,  $R'_1$ ,  $R'_2$ ,  $R'_3$ ,  $R'_4$  and  $R'_5$ , which are identical or different from one another, are selected from hydrogen, halogen, alkyl, alkyloxy, or a methylene substituted with alkyloxy:

Y represents a radical  $CH_2$ ,  $CHOH$ ,  $CHF$ ,  $CHNH_2$  or  $C=O$ ;

m is equal to 1;

n is as defined in claim 1;

Z is a  $CH_2$  group or oxygen and in the latter case, n is equal to 2;

$R_2$  is as defined in claim 1, and

$R_3$  is  $alk-R^{\circ}_3$  wherein alk is an alkylene radical and  $R^{\circ}_3$  is alkyloxy, alkylthio, alkylamino, dialkylamino, cycloalkyloxy, cycloalkylthio, cycloalkylamino, N-cycloalkyl-N-alkylamino, -N-(cycloalkyl)<sub>2</sub>, phenoxy, phenylthio, phenylamino, N-alkyl-N-phenylamino, N-cycloalkyl-N-phenylamino, phenylalkyloxy, phenylalkylthio, phenylalkylamino, N-alkyl-N-phenylaminoalkyl, N-cycloalkyl-N-phenylalkylamino, heteroaryloxy, heteroarylthio, heteroarylamino, N-alkyl-N-heteroarylamino, N-cycloalkyl-N-heteroarylamino, heteroarylcarbonyl, heteroarylalkyloxy, heteroarylalkylthio, heteroarylalkylamino, N-alkyl-N-heteroarylaminoalkyl, N-cycloalkyl-N-heteroarylaminoalkyl, -NRaRb or -CO-NRaRb wherein Ra and Rb are as defined in claim 1, or alternatively  $R^{\circ}_3$  represents  $-CR'b=CR'c-R'a$  for which R'a represents phenyl, phenylalkyl, heteroaryl or heteroarylalkyl, phenoxyalkyl, phenylthioalkyl, phenylaminoalkyl, N-alkyl-N-phenylaminoalkyl, heteroaryloxyalkyl, heteroarylthioalkyl,

heteroarylaminoalkyl, N-alkyl-N-heteroarylaminoalkyl, heteroarylthio, or phenylthio, and for which R'b and R'c is hydrogen, alkyl or cycloalkyl, or alternatively R°<sub>3</sub> is a radical -C≡C-Rd wherein Rd is alkyl, phenyl, phenylalkyl, phenoxyalkyl, phenylthioalkyl, N-alkyl-N-phenylaminoalkyl, mono- or bicyclic heteroaryl, heteroarylalkyl, heteroaryloxyalkyl, heteroarylthioalkyl, heteroarylaminoalkyl, N-alkyl-N-heteroarylaminoalkyl, or alternatively R°<sub>3</sub> is a radical -CF<sub>2</sub>-phenyl or -CF<sub>2</sub>-heteroaryl, wherein it being understood that the phenyl, benzyl, benzoyl or heteroaryl radicals or portions mentioned above are optionally substituted as set forth envisaged above in claim 1, wherein the compound is optionally in

~~or its enantiomeric or diastereoisomeric forms,~~ or mixtures of these forms, or optionally where appropriate in a syn or an anti form or mixtures thereof, or its salts.

3. (currently amended) The compound of general formula (I) as defined in claim 1, wherein

X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub> and X<sub>5</sub> are >C-R'<sub>1</sub> to >C-R'<sub>5</sub> respectively,

wherein R<sub>1</sub>, R'<sub>1</sub>, R'<sub>2</sub>, R'<sub>3</sub>, R'<sub>4</sub> and R'<sub>5</sub> are identical or different from one another and are selected from hydrogen, halogen, alkyl, alkyloxy, or a methylene substituted with alkyloxy;

Y is CH<sub>2</sub>, CHOH, CHF, CHNH<sub>2</sub> or C=O;

m is equal to 1;

n is as defined in claim 1;

Z is a CH<sub>2</sub> group or oxygen and in the latter case, n is equal to 2;

R<sub>2</sub> is as defined in claim 1, and

R<sub>3</sub> is  $[[\text{:}]]$  alk-R°<sub>3</sub>, wherein alk is alkylene and R°<sub>3</sub> is cycloalkyloxy, cycloalkylthio, phenoxy, phenylthio, phenylalkyloxy, phenylalkylthio, heteroaryloxy, heteroarylthio, heteroarylalkyloxy, heteroarylalkylthio, or alternatively R<sub>3</sub> is -CR'b=CR'c-R'a for which R'a represents phenyl, phenylalkyl, phenylthioalkyl, heteroaryl or heteroarylalkyl, phenoxyalkyl, heteroaryloxyalkyl, heteroarylthioalkyl, heteroarylthio, or phenylthio, and wherein R'b and R'c is hydrogen, alkyl or cycloalkyl,

or alternatively R°<sub>3</sub> represents a radical -C≡C-Rd wherein Rd is alkyl, phenyl, phenylalkyl, phenoxyalkyl, phenylthioalkyl, N-alkyl-N-phenylaminoalkyl, mono- or bicyclic heteroaryl, heteroarylalkyl, heteroaryloxyalkyl, heteroarylthioalkyl, the heteroaryl parts mentioned above being mono- or bicyclic,

wherein ~~it being understood that~~ the phenyl, benzyl, benzoyl or heteroaryl radicals or portions ~~mentioned above~~ are optionally substituted as disclosed in claim 1, and the compound is optionally in ~~or its enantiomeric or diastereoisomeric forms,~~ or mixtures of these forms, or optionally ~~where appropriate in a syn or an anti form or mixtures thereof, or its salts.~~

4. (currently amended) The compound of claim 1 which is selected from the group consisting ~~consisting of~~:

- 1-[(2E)-3-(2,5-difluorophenyl)-2-propenyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;

- 1-[(2E)-3-(2,5-difluorophenyl)-2-propenyl]-3-[3-hydroxy-(3-fluoro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[2-(2,5-difluorophenylsulfanyl)ethyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[2-(2,5-difluorophenoxy)ethyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[2-(thiophen-2-ylsulfanyl)ethyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[(2E)-3-(2,5-difluorophenyl)-2-propenyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)propyl]azetidine-3-carboxylic acid;
- 1-[(2E)-3-(2,5-difluorophenyl)-2-propenyl]-3-[3-hydroxy-(3-fluoro-6-methoxyquinolin-4-yl)propyl]azetidine-3-carboxylic acid;
- 1-[(2E)-3-(2,5-difluorophenyl)-2-propenyl]-3-[3-(3-chloro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[(2E)-3-(2,5-difluorophenyl)-2-propenyl]-3-[3-hydroxy-(3-chloro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[2-(2,5-difluorophenylsulfanyl)ethyl]-3-[3-(3-chloro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[2-(2,5-difluorophenoxy)ethyl]-3-[3-(3-chloro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;
- 1-[2-(thiophen-2-ylsulfanyl)ethyl]-3-[3-(3-chloro-6-methoxyquinolin-4-yl)propyl]-3-pyrrolidinecarboxylic acid;

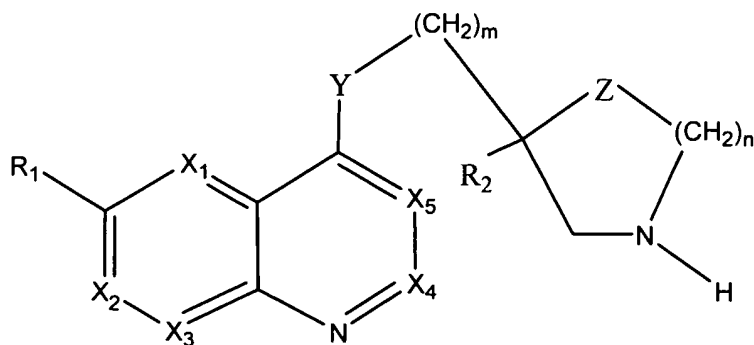


- 1-[(2E)-3-(2,5-difluorophenyl)-2-propenyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)-3-hydroxypropyl]-3-pyrrolidinecarboxylic acid;
- 3-[3-(3-chloro-6-methoxyquinolin-4-yl)]-3-hydroxypropyl]-1-[(2E)-3-2,5-difluorophenyl)-2-propenyl]-3-pyrrolidinecarboxylic acid;
- 1-[3-(2,5-difluorophenyl)propyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)-3-hydroxypropyl]-3-pyrrolidinecarboxylic acid, and
- 1-[2-[(2,5-difluorophenyl)thio]ethyl]-3-[3-(3-fluoro-6-methoxyquinolin-4-yl)-3-hydroxypropyl]-3-pyrrolidinecarboxylic acid;

wherein the compound is optionally in an ~~or its~~ enantiomeric or a diastereoisomeric form[[s]] or mixtures of these forms, or optionally ~~where appropriate~~ in a syn or an anti form or mixtures thereof, or its salts.

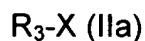
5. (original) A process for preparing a compound of formula (I) as defined in claim 1 comprising:

reacting a 4 substituted quinoline of the formula (II)



(II)

wherein  $X_1$ ,  $X_2$ ,  $X_3$ ,  $X_4$ ,  $X_5$ ,  $R_1$ ,  $R_2$ ,  $Y$ ,  $Z$ ,  $m$  and  $n$  are as defined in claim 1, wherein  $R_2$  is protected when it carries a carboxyl radical, with a compound of formula (IIa)



wherein  $R_3$  is as defined for formula (I) in claim 1 and  $X$  is halogen, a methylsulfonyl, trifluoromethylsulfonyl or p-toluenesulfonyl; removing the carboxyl protecting group, if necessary, to produce the compound of formula (I) as defined in claim 1; optionally separating the enantiomers or diastereomers of formula (I); optionally separating the syn and anti forms of formula (I); and optionally converting the compound of formula (1) into a pharmaceutically acceptable salt.

6. (original) The process according to claim 5 wherein  $R_3$  is  $-\text{alk}-R^{\circ}_3$ , wherein alk is an alkyl radical, and  $R^{\circ}_3$  is  $-\text{C}\equiv\text{C}-\text{Rd}$ , wherein Rd is as defined in claim 1 comprising:

reacting a compound of formula (II) with an alkynyl compound of formula  $\text{HC}\equiv\text{C}-\text{alk}-\text{X}$ , wherein alk is as defined above and  $X$  is halogen to give a compound of formula (I) wherein  $R_3$  is  $\text{HC}=\text{C}-\text{alk}-$ ; and substituting the compound of formula (I) wherein  $R_3$  is  $\text{HC}\equiv\text{C}-\text{alk}-$ , with an appropriate radical Rd, to give the compound of formula (I) wherein  $R_3$  is  $\text{Rd}-\text{C}\equiv\text{C}-\text{alk}-$ .

7. (original) The process according to claim 5 wherein  $R_3$  is  $-\text{alk}-R^{\circ}_3$ , wherein alk is an alkyl radical, and  $R^{\circ}_3$  is phenoxy, phenylthio, phenylamino, heteroaryloxy, heteroarylthio or heteroarylamino, comprising:

condensing a chain of formula  $\text{HO-alk-X}$  wherein X is halogen with a compound of formula (II) to produce a compound of formula (I) wherein  $R_3$  is  $\text{OH-alk-}$ ;

optionally converting the compound of formula (I) wherein  $R_3$  is  $\text{OH-alk-}$  to the compound of formula (I) wherein  $R_3$  is methanesulfonyl-alk-, halogen-alk- or p-toluenesulfonyl-alk-; and

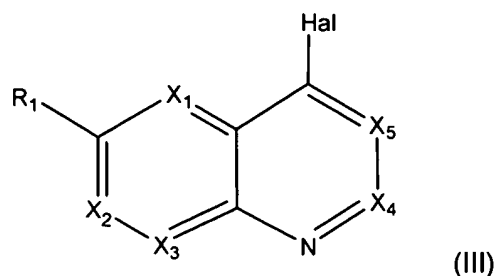
reacting the compound of the previous step with an aromatic compound having the formula  $R^{\circ}_3\text{H}$  or  $R^{\circ}_3\text{H}_2$  wherein said aromatic compound acts as basic reaction medium or optionally reacting directly said aromatic compound with a compound produced in the first condensing reaction under dehydration conditions.

8. (original) The process according to claim 5 for preparing compound of formula (I) wherein  $R_3$  is hydroxymethyl or hydroxyethyl further comprising:

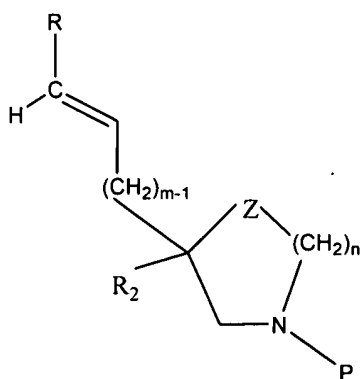
reducing a compound of formula (I) wherein  $R_2$  is selected from the group consisting of either carboxyl, protected carboxyl, carboxymethyl and protected carboxymethyl.

9. (original) The process according to claim 5 for preparing the compound of formula (II), wherein Y is a group CHR comprising:

condensing a compound of formula (III)



wherein  $R_1$ ,  $X_1$ ,  $X_2$ ,  $X_3$ ,  $X_4$  and  $X_5$  are as defined in claim 1 and Hal is halogen,  
with compound of formula (IV)

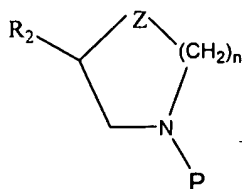


wherein P is a protecting group and R, Z, m, n and  $R_2$  are as defined in claim 1  
or  $R_2$  represents a protected radical if  $R_2$  represents or carries a carboxylic acid  
functional group;  
removing the protecting groups;  
optionally converting the substituents of the aromatic bicycle of formula (II) thus  
obtained, to give the expected compound substituted with  $R_1$ ,  $R'_1$ ,  $R'_2$ ,  $R'_3$ ,  $R'_4$ ,  
 $R'_5$ ; and

optionally removing any remaining protecting groups to give compound of formula (II) wherein R is CHR.

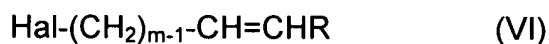
10. (original) The process according to claim 9 for preparing compound of formula (IV) wherein R, Z, P, R<sub>2</sub> and n are as defined in claim 9 and m is equal to 2 or 3 comprising:

reacting a compound of formula (V)



(V)

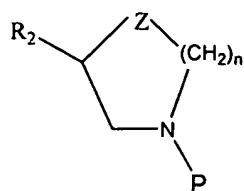
wherein Z and R<sub>2</sub> are as defined in claim 1 and P is a protecting group, with a compound of formula (VI)



wherein Hal is halogen and m and R are as defined in claim 1.

11. (currently amended) The process according to claim 9 for preparing a compound of formula (IV) wherein R, Z, P, R<sub>2</sub> and n are as defined in claim 9 and m is equal to 1, comprising:

reacting a compound of formula (V)



(V)

wherein Z and R<sub>2</sub> are as defined above and P is a protecting group, with a compound of formula (VI')



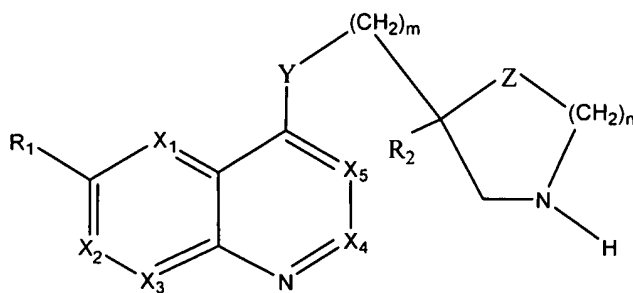
wherein R is as defined above; and

removing the hydrobromide from the product to obtain compound of formula (IV)

wherein R, Z, P, R<sub>2</sub> and n are as defined in claim 9 and m is equal to 1.

12. (currently amended)

A compound of formula (II)



(II)

wherein

X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub> and X<sub>5</sub> is C-R'<sub>1</sub> to C-R'<sub>5</sub> respectively, or alternatively at most one of them is a nitrogen atom, wherein

R<sub>1</sub>, R'<sub>1</sub>, R'<sub>2</sub>, R'<sub>3</sub>, R'<sub>4</sub> and R'<sub>5</sub> are identical or different from one another and represent a hydrogen or halogen atom or an alkyl, cycloalkyl, phenyl, phenylthio, mono- or bicyclic

heteroaryl or heteroarylthio, OH, SH, alkyloxy, difluoromethoxy, trifluoromethoxy, alkylthio, trifluoromethylthio, cycloalkyloxy, cycloalkylthio, acyl, acyloxy, acylthio, cyano, carboxyl, alkyloxycarbonyl, cycloalkyloxycarbonyl, nitro, -NRaRb or -CONRaRb radical (for which Ra and Rb can represent hydrogen, alkyl, cycloalkyl, phenyl, mono- or bicyclic heteroaryl or Ra and Rb form together with the nitrogen atom to which they are attached a 5- or 6-membered heterocycle which may optionally contain another heteroatom chosen from O, S and N and carrying, where appropriate, an alkyl, phenyl or mono- or bicyclic heteroaryl substituent on the nitrogen atom or, ~~where appropriate,~~ wherein the sulfur atom is oxidized to the sulfinyl or sulfonyl state, or methylene substituted with fluoro, hydroxyl, alkyloxy, alkylthio, cycloalkyloxy, cycloalkylthio, phenyl, mono- or bicyclic heteroaryl, carboxyl, alkyloxycarbonyl, cycloalkyloxycarbonyl, -NRaRb or -CONRaRb wherein Ra and Rb are as defined above,

or is phenoxy, heterocyclyloxy, benzyloxy, heterocyclylmethyloxy, or alternatively R<sub>1</sub> may also be difluoromethoxy, or a radical having the structure  $\text{--C}_p\text{F}_{2p+1}\text{--C}_m\text{F}_{2m+1}$ ,  $\text{--SC}_p\text{F}_{2p+1}\text{--SC}_m\text{F}_{2m+1}$  or  $\text{--OC}_p\text{F}_{2p+1}\text{--OC}_m\text{F}_{2m+1}$  wherein p, [m] is an integer from 1 to 6 or alternatively R'<sub>5</sub> may also be trifluoroacetyl,

m is equal to 1, 2 or 3;

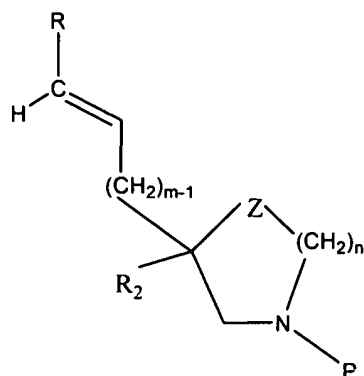
n is equal to 0, 1 or 2;

Y is CHR, CO, CROH, CRNH<sub>2</sub>, CRF or CF<sub>2</sub>, wherein R is hydrogen atom or alkyl (C<sub>1-6</sub>);

Z is CH<sub>2</sub>, oxygen, sulfur, SO, or SO<sub>2</sub> and, in this case, n is equal to 2; and

R<sub>2</sub> is -CO<sub>2</sub>R, -CH<sub>2</sub>CO<sub>2</sub>R, -CH<sub>2</sub>-CH<sub>2</sub>CO<sub>2</sub>R, -CH<sub>2</sub>OH or -CH<sub>2</sub>-CH<sub>2</sub>OH, wherein R is as defined above.

13. (original) A compound of formula (IV)



(IV)

wherein

R is hydrogen or an alkyl (C<sub>1-6</sub>);

m is equal to 1, 2 or 3;

n is equal to 0, 1 or 2;

Z is CH<sub>2</sub>, oxygen, sulfur, SO or SO<sub>2</sub> and, in this case, n is equal to 2; and

R<sub>2</sub> is -CO<sub>2</sub>R, -CH<sub>2</sub>CO<sub>2</sub>R, -CH<sub>2</sub>-CH<sub>2</sub>CO<sub>2</sub>R, -CH<sub>2</sub>OH, -CH<sub>2</sub>-CH<sub>2</sub>OH, or a protected carboxylic acid, wherein R is as defined above.

14. (original) A method for the treatment or prophylaxis of bacterial infections comprising administering to a patient in need of said treatment an effective amount of a compound according to claim 1 or a pharmacologically tolerable salt thereof.



15. (original) A pharmaceutical composition, or a pharmacologically tolerable salt thereof comprising a compound of claim 1, in the pure state or in combination with one or more compatible and pharmaceutically acceptable diluents or adjuvants.

16. (new) The compound of general formula (I), as defined in claim 1, wherein Y is selected to be CROH, wherein R is a hydrogen atom or an alkyl (C<sub>1-6</sub>) radical.

17. (new) The compound of general formula (I), as defined in claim 1, wherein X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub> and X<sub>5</sub> are as defined in claim 1, R<sub>1</sub>, R'<sub>1</sub>, R'<sub>2</sub>, R'<sub>3</sub>, R'<sub>4</sub> and R'<sub>5</sub>, which are identical or different, are selected from hydrogen, halogen, alkyl, alkyloxy, or a methylene substituted with alkyloxy:

Y represents a species selected from CH<sub>2</sub>, CHF, CHNH<sub>2</sub>, C=O, or CROH, wherein R is a hydrogen or an alkyl (C<sub>1-6</sub> radical);

m is equal to 2;

n is as defined in claim 1;

Z is a CH<sub>2</sub> group or oxygen and in the latter case, n is equal to 2;

R<sub>2</sub> is as defined in claim 1, and

R<sub>3</sub> is alk-R°<sub>3</sub> wherein alk is an alkylene radical and R°<sub>3</sub> is alkyloxy, alkylthio, alkylamino, dialkylamino, cycloalkyloxy, cycloalkylthio, cycloalkylamino, N-cycloalkyl-N-alkylamino, -N-(cycloalkyl)<sub>2</sub>, phenoxy, phenylthio, phenylamino, N-alkyl-N-phenylamino, N-cycloalkyl-N-phenylamino, phenylalkyloxy, phenylalkylthio,

phenylalkylamino, N-alkyl-N-phenylaminoalkyl, N-cycloalkyl-N-phenylalkylamino, heteroaryloxy, heteroarylthio, heteroarylamino, N-alkyl-N-heteroarylamino, N-cycloalkyl-N-heteroarylamino, heteroarylcarbonyl, heteroarylalkyloxy, heteroarylalkylthio, heteroarylalkylamino, N-alkyl-N-heteroarylaminomethyl, N-cycloalkyl-N-heteroarylaminomethyl, -NR<sup>a</sup>R<sup>b</sup> or -CO-NR<sup>a</sup>R<sup>b</sup> wherein R<sup>a</sup> and R<sup>b</sup> are as defined in claim 1, or alternatively R<sup>3</sup> represents -CR<sup>b</sup>=CR<sup>c</sup>-R<sup>a</sup> for which R<sup>a</sup> represents phenyl, phenylalkyl, heteroaryl or heteroarylalkyl, phenoxyalkyl, phenylthioalkyl, phenylaminoalkyl, N-alkyl-N-phenylaminoalkyl, heteroaryloxyalkyl, heteroarylthioalkyl, heteroarylaminoalkyl, N-alkyl-N-heteroarylaminomethyl, heteroarylthio, or phenylthio, and for which R<sup>b</sup> and R<sup>c</sup> is hydrogen, alkyl or cycloalkyl, or alternatively R<sup>3</sup> is a radical -C≡C-R<sup>d</sup> wherein R<sup>d</sup> is alkyl, phenyl, phenylalkyl, phenoxyalkyl, phenylthioalkyl, N-alkyl-N-phenylaminoalkyl, mono- or bicyclic heteroaryl, heteroarylalkyl, heteroaryloxyalkyl, heteroarylthioalkyl, heteroarylaminoalkyl, N-alkyl-N-heteroarylaminomethyl, or alternatively R<sup>3</sup> is a radical -CF<sub>2</sub>-phenyl or -CF<sub>2</sub>-heteroaryl, wherein the phenyl, benzyl, benzoyl or heteroaryl radicals or portions thereof are optionally substituted as set forth in claim 1, and wherein the compound includes enantiomeric or diastereoisomeric forms or mixtures of these forms, or alternately a syn or an anti form of the compound or mixtures thereof, or its salts.